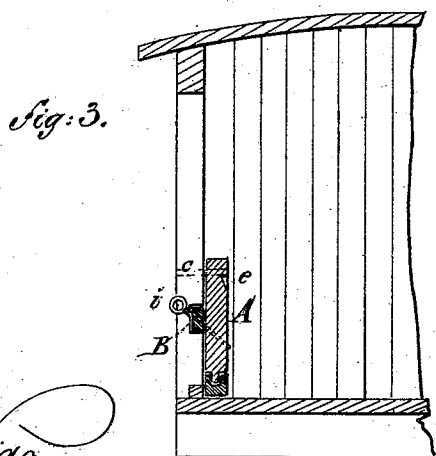
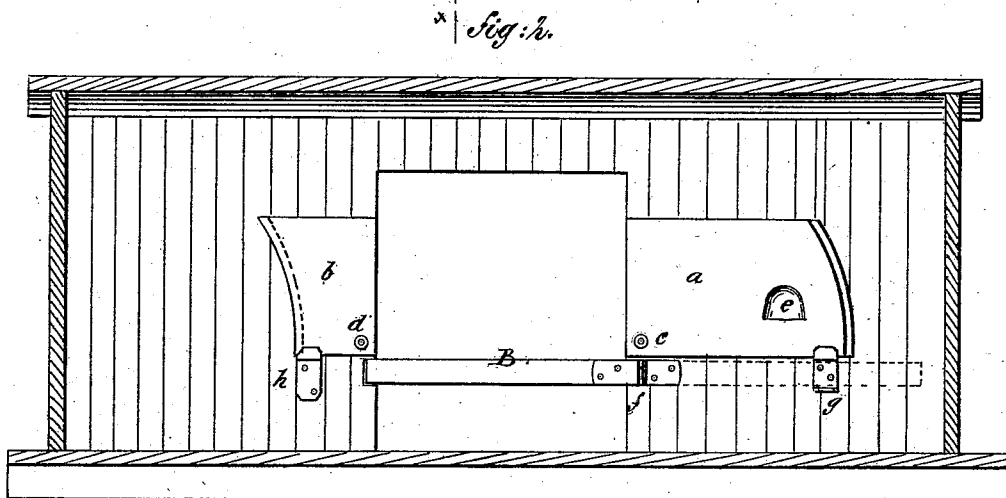
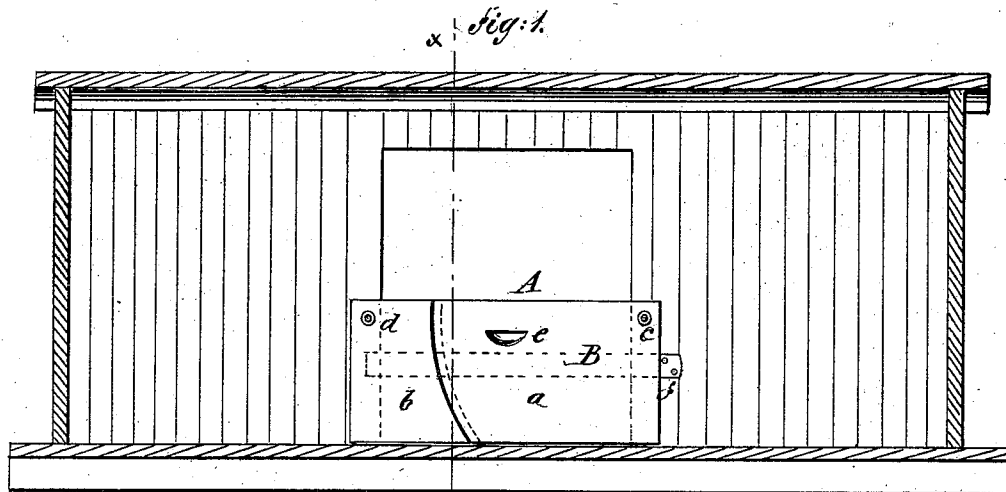


J. M. DUNCAN.
GRAIN CAR DOORS.

No. 183,287.

Patented Oct. 17, 1876.



WITNESSES:

Chas. Nida
John Goetz

INVENTOR:

J. M. Duncan
BY *Wm. H. 2*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES M. DUNCAN, OF COVINGTON, INDIANA.

IMPROVEMENT IN GRAIN-CAR DOORS.

Specification forming part of Letters Patent No. 183,287, dated October 17, 1876; application filed September 22, 1876.

To all whom it may concern:

Be it known that I, JAMES M. DUNCAN, of Covington, in the county of Fountain and State of Indiana, have invented a new and Improved Grain - Car Door, of which the following is a specification:

Figure 1 represents the side of a car with my improved door attached. Fig. 2 represents the portion of the door when thrown open. Fig. 3 is a transverse section on line *x* in Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention relates to a new and improved grain-car door; and it consists of a door made in two parts, each part being pivoted at its upper and outer corner to one of the door-posts, and capable of swinging in a vertical plane. The separating-line of the door is an arc described from the pivot of one of the doors, making the edge of one of the doors convex, and that of the other concave. It also consists in a hinged bar for sustaining the door when closed, which rests in recesses in the door-posts, and in brackets for supporting the bar and doors when opened.

Referring to the drawing, A is the car-door, which consists of the parts *a* and *b*. The part *a* is pivoted to the door-post at *c*, and has its edge that meets the part *b* formed on an arc described from the pivot *c*. The part *b* is pivoted at *d*, and its edge is made concave to conform to the convexity of the part *a*. The meeting-edges of the doors are rabbeted, which makes the joint-grain tight. The doors are provided with niches or handles at *e*, for convenience in handling. B is a bar for supporting the door A, that extends across the doorway, and rests in recesses in the door-posts. It is hinged at *f*, so that it may be folded back out of the way. A bracket, *g*, is attached to the side of the car for the part *a* to rest upon when thrown open, and also

for supporting the bar B. A bracket, *h*, is also provided for supporting the part *b*.

When the doors are closed a pin, *i*, is passed through the bar B into the part *a*, which prevents the door from becoming accidentally opened.

The pivots or hinges of the parts of the door are simply stout bolts running through the door and door-post, and provided with a washer of large diameter at the inside of the door. The hinge of the bar should not be detachable, as it is entirely out of the way when swung back, and, being on a pivot, it is not inconvenient to fold back.

The advantages claimed for the improvement are, first, that the door closes tightly, and is not liable to become accidentally opened; at the same time it may be readily opened by removing the fastening-pin and turning the sections of the door on their pivots; second, it avoids the necessity of nailing the doors when loading, and of damaging or destroying them in opening; third, being in two sections, makes them lighter and more convenient to shippers than any door now in use.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A grain-car door made in two parts, each of which is pivoted at the upper and outer corner to one of the car-door parts, and is capable of swinging in a vertical plane, the separating line between the parts of the door being an arc described from the pivot of one of the doors, substantially as herein shown and described.

2. The combination of the vertically-swinging parts *a* *b*, the hinged bar B, and brackets *g* and *h*, substantially as shown and described.

JAMES MITCHEL DUNCAN.

Witnesses:

GEO. K. MCCOMAS,
JAMES G. HARDY.